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of originality. He had immense persistence and enthusiasm, well attested by his accomplishments against great odds. A mere study of his life is in itself thrilling. He leaves an honored name of which his family may well be proud. He was an extremely likeable man, a loyal son of his university who brought much honor to his alma mater.

FRANK STRONG

UNIVERSITY OF KANSAS

THE BONAPARTE FUND OF THE PARIS ACADEMY OF SCIENCES

THE committee appointed to deal with the allocation of the Bonaparte Fund for the year 1914, has, we learn from *Nature*, made the following proposals, which have been unanimously adopted by the academy:

1. 2,000 francs to Pierre Breteau, to enable him to pursue his researches on the use of palladium in analysis and in organic chemistry.
2. 2,000 francs to M. Chatton, to give him the means of continuing his researches on the parasitic Peridinians.
3. 3,000 francs to Fr. Croze, to enable him to continue his work on the Zeeman phenomenon in band and line spectra, the amount to be applied to the purchase of a large concave grating and a 16-cm. objective.
4. 6,000 francs to Dr. Hemsalech, for the purchase of a resonance transformer and a battery of condensers for use in his spectroscopic researches.
5. 2,000 francs to P. Laïs, director of the Vatican Observatory, to assist in the publication of the photographic map of the sky.
6. 2,000 francs to M. Pellegrin, to facilitate the pursuit of his researches and the continuation of his publications concerning African fishes.
7. 2,000 francs to Dr. Troussel, to aid him in his studies relating to the theory of the minor planets.
8. 2,000 francs to M. Vigouroux, to assist him in continuing his researches on silicon and its different varieties. These researches, in which it is necessary to make use of hydrofluoric acid, necessitate the use of expensive receivers.
9. 3,000 francs to M. Alluaud, for continuing the publication, undertaken with Dr. R. Jeannel, of the scientific results of three expeditions in eastern and central Africa.
10. 9,000 francs to be divided equally between

MM. Pitard, de Gironcourt, and Lecointre, all members of the scientific expedition to Morocco organized by the Société de Géographie.

11. 2,000 francs to Professor Vasseur, to assist him in his geological excavations in a fossil-bearing stratum at Lot-et-Garonne.

12. 3,500 francs to Dr. Mauguin, for the continuation of his researches on liquid crystals and the remarkable orientation phenomena presented by these singular bodies when placed in a magnetic field. The grant will be applied to the construction of a powerful electromagnet.

13. 2,000 francs to Dr. Anthony to meet the cost of his researches on the determinism of the morphological characters and the action of primary factors on the course of evolution.

14. 4,000 francs to Professor Andoyer, a first instalment towards the cost of the calculation of a new table of fifteen figure logarithms.

15. 4,000 francs to M. Bénard, to enable him to continue his researches in experimental hydrodynamics on a large scale.

16. 2,000 francs to Dr. Chauvenet, to enable him to continue his researches on zirconium and its complex combinations.

17. 2,000 francs to Professor François Franck, for the chronographic study of the development of the embryo, with special examination of the rhythmic function of the heart.

18. 2,000 francs to Professor Sauvageau, for the pursuit of his studies on the marine algæ.

SCIENTIFIC NOTES AND NEWS

THE gold medal of the Royal Astronomical Society has been conferred on Professor A. Fowler for his work in astrophysics.

THE Berlin Anthropological Society has awarded its Rudolf Virchow Medal to Dr. Karl Poldt, emeritus professor of anatomy in Vienna.

PROFESSOR FRITZ HABER and Professor R. Willstätter, both of the Kaiser Wilhelm Institute for Chemistry, have been elected members of the Berlin Academy of Sciences.

DR. HANS MEYER, known for his explorations in Africa, has been elected honorary professor of colonial geography in the University of Leipzig.

DR. PIERRE WEISS, professor of physics in the Zurich Technical School, has been awarded

the Lasferre prize (\$1,600) by the French Institute.

DR. JOSEF ENGLISCH, emeritus professor of surgery in the University of Vienna, has celebrated his eightieth birthday.

DR. ALFRED KLEINER, professor of physics at Zurich, has on account of the state of his health retired from his chair and has been made honorary professor.

MR. T. F. BURTON has succeeded Mr. Watson Smith as editor of the Journal of the Society of Chemical Industry, which is issued fortnightly in London by the society.

PROFESSOR G. C. BOURNE, Linacre professor of comparative anatomy at Oxford, has been given leave of absence to engaged in military service.

WE learn from *Nature* that the second Indian Science Congress, organized by the Asiatic Society of Bengal, was held at the Presidency College, Madras, on January 14-16, under the presidency of Surgeon-general W. B. Bannerman. The sections of the congress, and their chairman, were as follows: Agriculture and applied science, Dr. H. H. Mann; physics, Mr. C. V. Raman; chemistry, Professor P. C. Ray; zoology, Dr. N. Annandale; botany, Dr. C. A. Barber; ethnology, Mr. H. V. Nanjundayya; geology, Dr. W. F. Smeeth.

PROFESSOR R. W. THATCHER, chief of the division of agricultural chemistry of the University of Minnesota, has been elected president of the Minnesota Section of the American Chemical Society. The section will hereafter hold regular meetings on the third Friday evening of each month at various laboratories in the Twin Cities.

DR. A. F. GILMAN, head of the chemistry department of Ripon College, has returned for the second semester's work after a leave of absence for a half year spent in study and travel.

PROFESSOR JOHN DEWEY delivered the eighth series of McNair lectures at the University of North Carolina on February 5, 6 and 7. His subject was "Philosophy and Politics." The lectures dealt with (1) The Inner and Outer

Worlds, (2) The State and Moral Life, (3) The German Philosophy of History.

DR. C. WARDELL STILES, of the U. S. Public Health Service, gave the ninth Weir Mitchell lecture of the College of Physicians, Philadelphia, on February 16. His topic was: "An Experiment from the Standpoint of Applied Zoology in Medical Inspection of Schoolchildren as a Basis for an Intensive Public Health Campaign."

DR. LILIAN WELSH, professor of physiology and hygiene at Goucher College, Baltimore, spoke on February 12 at Mt. Holyoke College on "American Women in Science." The lecture was given under the auspices of the Nettie Maria Stevens memorial lectureship fund, established by the Naples Table Association, for promoting laboratory research for women. The lecture was also given during the week at Wellesley College and Brown University.

PROFESSOR DOUGLAS W. JOHNSON, of Columbia University, lectured before the Engineers Club of Trenton, N. J., on February 11, on "The Topography of Western Europe and its Influence on the Campaign against France." On January 15 he delivered the same lecture before the Geographical Society of Philadelphia.

PROFESSOR ARTHUR H. BLANCHARD, of Columbia University, on February 9, delivered an illustrated address on the subject "Economic Phases of Highway Engineering" before the Middletown Scientific Association at its meeting at Wesleyan University. On February 11 he delivered an address on "The Highway Engineer in Public Life" at the annual meeting of the Engineers Society of Northwestern Pennsylvania.

THE Illinois State Museum of Natural History announces a course of four popular illustrated lectures on natural history on Friday evenings as follows:

February 19—"Volcanic Emanations," by A. L. Day, Ph.D., director Geophysical Laboratory, Washington, D. C.

February 26—"The Wonderful Heavens," by F. R. Moulton, Ph.D., professor of astronomy, University of Chicago, Chicago.

March 5—"The Trophies of the Fossil Hunter," by A. R. Crook, Ph.D., curator Illinois State Museum, Springfield.

March 12—"Alaska Salmon," by H. B. Ward, Ph.D., professor of zoology, University of Illinois, Urbana.

THE University of Oxford has received \$2,200, as we learn from *Nature*, from friends of the late Professor Gotch, with the view of perpetuating the memory of the late Waynflete professor, and of encouraging the study of physiology within the university. The income of the fund will be applied, first, to the establishment of a Gotch memorial prize to be awarded annually, after examination, to a student in the physiological laboratory; and, secondly, to the creation and maintenance of a Gotch memorial library in the same laboratory. A portrait of Professor Gotch has been hung on the walls of the department.

SAMUEL WALKER SHATTUCK, for forty-four years professor and comptroller of the University of Illinois, died at his home in Champaign on February 13. Professor Shattuck was born in 1841, at Groton, Mass. Since 1868 he has served the University of Illinois. For thirty-seven years he was head of the department of mathematics and from 1873 to 1912 he looked after the business affairs of the university. In 1912 Professor Shattuck was retired on the Carnegie Foundation.

MR. F. W. RUDLER, curator of the Museum of Practical Geology, London, died on January 23.

DR. KARL LUDWIG MOLL, formerly professor of mechanical engineering in the Riga School of Technology, has died at the age of eighty-three years.

DR. NICOLAS OUMOFF, professor of physics at Moscow, has died at the age of sixty-eight years.

THERE have been killed in the war, M. Robert Douvillé, paleontologist in the Paris School of Mines; Dr. Anton Lackner, docent for geometry in the Vienna Technological Institute; Dr. Rudolf Rau, formerly professor of physics at Jena, and Dr. Felix Hahn, geologist of the University of Munich.

THE Berlin correspondent of the *Journal* of the American Medical Association writes that according to the latest official list, 132 medical men have so far been killed in the war, 22 wounded, 45 have died and 166 are missing or prisoners. Among the medical victims of the war are three distinguished scientific men, Professor Jochmann, the medical head of the infectious department of the municipal Rudolph Virchow Hospital, succumbed to typhus fever which he acquired in the examination and treatment of Russian prisoners of whom 800 are ill with typhus. Professor Sprengel, the superintendent of the surgical department of the Ducal Hospital in Brunswick, died from sepsis at the age of sixty-two, having infected himself at an operation on a wounded soldier. The Freiburg dermatologist, Professor Jakobi, died in the field as a result of disease.

THE U. S. Civil Service Commission announces an examination for assistant in agricultural geography, for men only, to fill a vacancy in this position in the Office of Farm Management, Bureau of Plant Industry, Department of Agriculture, Washington, D. C., at a salary ranging from \$1,800 to \$2,000 a year. The duties of this position will be to assist in investigations being carried on in the above office concerning the development of agricultural enterprises under the influence of geographic conditions, such as topography, climate, soil, location, etc.

THE Robert D. Brigham Hospital for Incurables benefits to the extent of \$50,000 by the will of Mrs. Ellen A. R. Goldthwait, of Boston. This sum is to constitute a fund to be known as the Joel and Ellen Goldthwait Research Fund, and the income is to be used for work to increase the knowledge of chronic diseases.

It is stated in *Nature* that a meeting of the General Organizing Committee for the International Botanical Congress, which has been arranged to be held in London next May, took place at the Linnean Society's rooms on January 21. A report was given of the work of preparation which had already been carried out by the executive committee, and the mem-

bers were asked to consider the present position. The two following resolutions were carried: (1) That the congress be not held in 1915; (2) that the present executive committee continue to act so long as necessary. The committee was strongly of opinion that a meeting of the congress in London should not be abandoned, and the suggestion was made that it might take place at the next quinquennium, in 1920. But it was agreed that nothing definite could be settled at the present time, and the following resolution was passed: "That the executive committee be authorized to convoke a meeting of the general committee at some future date to consider the date of the congress." It was also decided that in the meantime the general committee be called together once a year.

THE year 1914 was an eventful one in the industry of mining radium, uranium and vanadium ores and had by far the largest year's production yet made. Figures collected by Frank L. Hess, of the United States Geological Survey, indicate that the output amounted to about 4,300 short tons of dry ore carrying 87 tons of uranium oxide and 22.4 grams of metallic radium. The ore was valued at about \$445,000. The ore produced in 1913 contained 41 tons of uranium oxide and 10.5 grams of radium, and that produced in 1912 contained 26 tons of uranium oxide and 6.7 grams of radium. About nine tenths of the contained radium is thought to be recoverable under improved processes. Although carnotite, a mineral of these rare metals, contains three times as much uranium oxide as vanadium oxide, the Colorado and Utah ores of these metals generally contain other vanadium minerals in such quantity that vanadium oxide is present in excess of the uranium oxide. However, little is paid for the vanadium, as its separation from uranium is troublesome, and only a few thousand dollars was received in 1914 by brokers or producers for the vanadium in the ores sold. Sandstone impregnated with roscoelite, a vanadium-bearing mica, is mined at Vanadium, San Miguel County, Colo., on the eastern edge of the carnotite field, by the Primos Chemical Co.

The total quantity of vanadium in the carnotite and other ores mined during the year was apparently about 432 tons. About the beginning of 1914, owing to the very high prices charged for radium salts, their scarcity, their evident usefulness in treating diseases, the practical impossibility of the poor receiving treatment by radium because of its scarcity and high cost, and to the fact that much of the radium-bearing ore was being shipped out of the country, Secretary of the Interior Lane caused to be introduced in Congress bills reserving radium-bearing lands from entry as mining claims, and providing for government purchase. The bills are still pending. During the year the National Radium Institute conducted, under the supervision of the Bureau of Mines, mining operations at Long Park, near Paradox Valley, in Montrose County, Colo., and a plant at Denver for the production of radium and investigation of processes. The work has been so encouraging that Director Holmes has announced the probable production of radium at one third its present cost. Messrs. Lind and Whittemore, of the Bureau of Mines, state that their investigations show that carnotite carries proportionally to its content of uranium as much radium as pitchblende or other uranium minerals—that is, the radium has reached its maximum ratio to the uranium from which it is derived and is thus in equilibrium. From published results of experiments made on casual specimens of carnotite it had been popularly supposed that carnotite was less rich than pitchblende in radium.

AN unusual feature of the work of the United States Coast and Geodetic Survey, Department of Commerce, during the past summer was the successful use of a one and one half ton automobile truck in transporting an astronomical party and outfit through a portion of the southwest which is generally dreaded by the transcontinental tourist. The party was in charge of Mr. C. V. Hodgson and was in the field from May to October. The trip is the more remarkable when the fact is taken into consideration that the requirements of the work prevented a close adherence to the routes usually followed. Observations were

frequently made on mountain peaks, so the journey was from mountain to mountain, rather than along main traveled roads from city to city. The general route followed by Mr. Hodgson and his party was from Denver, Colorado, to Pecos, Texas, then southwest almost to El Paso, where a detour was made over poor trails through southern New Mexico into Arizona. The central and southern portions of the latter state were rather well covered, the itinerary including Solomonsville, Douglas, Benson, Tucson, Globe, Phoenix, Yuma and Parker. The auto truck was then driven across California to San Diego and the San Jacinto mountains, thence via Los Angeles, Mojave and Sacramento to Carson City, Nevada. Astronomical observations were carried along the California-Nevada boundary to Needles, California, where the season ended. During the season the truck, carrying a capacity load, was run more than 5,000 miles under road conditions varying from the deep mud encountered in New Mexico and Texas, and the heavy sands of the Colorado River and Nevada desert regions, to the splendid roads of southern and central California. The cost sheets of the season show that the work was done at a saving of at least 35 per cent. from the cost had teams been used. The cost per mile for oil and gas varied from 2.7 cents to 6.6 cents in different sections of the country, and averaged 3.9 cents for the entire season. A remarkable feature of the performance of the truck and a tribute to the good work of the driver was the fact that, from the time of leaving Colorado Springs to the end of the season, about six months, during which the truck was run over 5,000 miles, only two hours were lost on the road on account of engine troubles.

We learn from the *Geographical Journal* that Messrs. Geo. Philip and Son, Ltd., have prepared a relief model map of Central Europe, constructed to illustrate the topography of the main theaters of the present war. The model, which costs £6, 6s., measures 62 by 35 inches, and is on a horizontal scale of 18 miles to the inch, and a vertical one of 5,000 feet to the inch, so that the heights are exaggerated

nineteen times. Political boundaries are shown, and also towns in red, but neither roads nor railways. The model is said to show well the continuity of the Central Plain from Russia westwards to the margin of the North Sea and the Channel, and thus makes clear at once the exposed frontier of Germany, and the military reason for the violation of Belgian neutrality. Most of the places which have become famous in the western war area are marked, and it is possible to follow very clearly the battle lines of the Marne and of the Aisne, the fighting in the Argonne region, the conflicts round Ypres and the Yser, and so on. Among minor features which are well shown, are the position of the gap of Toul, due to the fact that a stream which once ran into the Meuse has been captured by the Moselle, and the deserted valley forms an open groove between the two rivers, a groove through which passes the railway from Paris to Toul and Nancy. The position of Reims, also, placed as it is on a natural line of communication between Champagne, Burgundy, the middle Rhine valley and the Low Countries, is clearly seen, and it helps to explain the constant bombardment of that ill-fated city, whose splendid cathedral illustrates its early importance as a crossing-point of routes.

We learn from the *Journal* of the American Medical Association that the secretary of state of Missouri has issued articles of incorporation to "The Missouri Foundation for Health Conservation," the purposes of which are "the conservation of health and the prevention of disease to the end that human efficiency may be increased and human suffering prevented." Its purposes are to be secured by any means "that demands of time or of science may require." The first activity undertaken will be a medical laboratory to be established at St. Joseph, with its tributary population of \$1,000,000. It is intended that this institution shall be a clearing-house where all doctors living in the country tributary to St. Joseph may send specimens from patients for analysis and get prompt returns. The work will be financed by fees, donations, subscriptions and bequests, its aims being

scientific, social and benevolent and not commercial. In addition to the medical laboratory, other activities for health conservation will be inaugurated. The secretary of the foundation is Dr. Daniel Morton, St. Joseph, and the members of the board of control are prominent citizens of St. Joseph and the state.

FROM the annual statement of the British board of trade *Nature* prints figures for 1913 of imports of scientific instruments and apparatus, as follows:

Scientific Instruments and Apparatus (other than Electrical) Complete

	£
Total imports	710,341
Of which from Germany	362,891
Belgium	28,939
France	108,040
Switzerland	19,872
U. S. A.	182,293

Parts thereof (including Kinematograph Films, Photographic Plates and Films, and Sensitized Photographic Paper)

	£
Total imports	2,373,426
Of which from Germany	310,229
Belgium	126,725
France	522,682
Switzerland	28,762
Italy	121,842
U. S. A.	1,256,311

It thus appears that the imports from the United States exceed those from France and Germany combined. It may be expected that hereafter the imports of scientific apparatus (of which, however, photographic supplies are a considerable part) from the United States will exceed those from all other countries combined.

UNIVERSITY AND EDUCATIONAL NEWS

THE Thomas W. Evans Museum and Dental Institute, School of Dentistry, the University of Pennsylvania, will be dedicated on February 22 and 23. On the afternoon of February 22 the presentation and formal opening of the building will take place and addresses will be made as follows:

Dr. Charles Gordon, of Paris, France.

Dr. Wilhelm Dieck, of Berlin, Germany.

Mr. John Howard Mummey, M.R.C.S., L.D.S., of London, England.

Dr. William Simon, of the Baltimore College of Dental Surgery

Dr. Edward C. Kirk, dean of the Thomas W. Evans Museum and Dental Institute School of Dentistry, University of Pennsylvania.

THE new building of the Mellon Institute of Industrial Research of the University of Pittsburgh, will be dedicated on the morning of February 26. The principal address will be made by Dr. Rossiter W. Raymond. In the evening Professor John J. Abel, of Johns Hopkins University, will deliver the first Mellon Lecture under the auspices of the Society for Biological Research of the University of Pittsburgh. The subject of the lecture will be "Experimental and Chemical Studies of the Blood and Their Bearing on Medicine."

DR. KARL T. COMPTON, instructor in physics at Reed College, Portland, Oregon, will go to Princeton University next fall as assistant professor of physics. Dr. Compton received the degree of Ph.D. at Princeton in 1912.

Two new members have been recently added to the faculty of the New York State College of Forestry. Mr. G. A. Gutches, formerly in the U. S. National Forest Service, later district forest inspector of Saskatchewan, Canada, becomes director of the New York State Ranger School at Wanakena, N. Y. Mr. H. H. Tryon, formerly forest engineer, becomes instructor in forest utilization. This makes eight new appointments to the faculty of the New York State College of Forestry within the past year. The appointment of Dr. C. C. Adams as assistant professor of forest zoology was noted in *SCIENCE* of June, 1914. The other recent appointments are as follows: Dr. J. Fred Baker, formerly professor of forestry in Michigan Agricultural College, as professor of experimental forestry; Dr. L. H. Pennington, formerly associate professor of botany in Syracuse University, as professor of forest pathology; Dr. H. P. Brown, formerly instructor at Cornell, as assistant professor in forest botany; Mr. Shirley W. Allen, formerly deputy forest supervisor of the Lassen National Forest, California, as assistant professor of